

**Cement clinker production comprising partial removal of
a flow of rotary kiln exhaust gas containing harmful
substances**

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C L A I M S

1. A method for the production of cement clinker from
raw cement meal which is preheated in at least one heat
10 exchanger string, through which the exhaust gas from a
rotary tubular kiln (19) flows, and is burnt in the
sintering stage of the rotary tubular kiln to form
cement clinker which is cooled in a following cooler
(20), comprising the removal of a partial hot flow (32)
15 (bypass gas flow) of the rotary kiln exhaust gas, said
partial flow being laden with dust loads and/or
gaseous/vaporous harmful substances inclined to cause
cakings, comprising the cooling of the bypass gas flow
(32) in a mixing chamber (33) and comprising the
20 following separation of dust containing harmful
substances from the cooled bypass gas flow,
characterized by the following features:

- 25 a) at least one removed partial stream (35, 38) of
the non-dedusted system exhaust gas (22, 39)
already present in the cement clinker
production line is introduced, prior to
dedusting in the existing system filter (25,
41), into the mixing chamber (33) and is
30 utilized for cooling the bypass gas flow (32);
- b) downstream of the partial exhaust gas flow
extraction (37), the mixed gas flow (34)
removed from the mixing chamber (33) is
35 returned into the system exhaust gas (22, 39)
again, likewise upstream of the system filter
(25, 41).

2. The method as claimed in claim 1, characterized in that the system exhaust gas (22) utilized as cooling medium is the exhaust gas from the raw-meal preheater/heat exchanger string.

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3. The method as claimed in claim 1, characterized in that the system exhaust gas utilized as cooling medium is the residual exhaust air (39) from the clinker cooler (20) which is already present and is not
10 utilizable in the cement clinker production line itself.

4. The method as claimed in claim 1, characterized in that the system exhaust gases utilized as cooling
15 medium are the exhaust gases from a mill-drying plant operated by means of exhaust gases (22) from the heat exchanger string.

5. The method as claimed in claim 1, characterized in that the mixed gas flow (34) removed from the mixing
20 chamber (33) is returned into the system exhaust gas string upstream of its spray tower (24) preceding the system filter (25).

25 6. A plant for the production of cement clinker from raw cement meal, comprising a rotary tubular kiln (19), comprising at least one heat exchanger string, in particular cyclone suspension gas heat exchanger system, which precedes the rotary tubular kiln and
30 through which the exhaust gas from the latter flows, comprising a clinker cooler (16) following the rotary tubular kiln (19), and comprising a bypass gas removal (32) for the removal of a partial flow of the rotary kiln exhaust gas, with cooling of the bypass gas flow
35 in a mixing chamber (33) and with the following separation of dust containing harmful substances from the cooled bypass gas flow, characterized by the following features:

- a) a partial-flow line (35) or (38) is branched off from the exhaust gas line (22) or (39) of the heat exchanger string and/or of the clinker cooler (20) and is introduced into the mixing chamber (33);
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- b) downstream of the partial exhaust gas flow extraction (37), the mixing chamber (33) is connected to the exhaust gas line (22) or (39) again for the purpose of introducing the cooled
- 10 mixed gas (34) into the exhaust gas line;
- c) both the partial exhaust gas flow extraction (37) and the return of the mixed gas (34) into the exhaust gas line (22) or (39) lie upstream of the
- 15 system filter (25) or clinker cooler filter (41) in terms of flow.